

AMENDMENTS TO THE CLAIMS

Please amend the claims as shown in the marked-up copy to read as follows:

1. (Presently Amended) A coating composition comprising:

~~(a) at least one component selected from the group consisting of an organosilane represented by the following general formula (1), a hydrolyzate of said organosilane and a condensates of said organosilane;~~

(a-1) at least one component selected from the group consisting of an organosilane represented by general formula (1) wherein n is 1 or 2, and at least one of R¹ groups is an epoxy group-containing substituted derivative, a hydrolyzate of said organosilane and a condensate of said organosilane; and

(a-2) at least one component selected from the group consisting of an organosilane represented by general formula (1) wherein no epoxy group is contained in R¹, a hydrolyzate of said organosilane and a condensate of said organosilane;

C' (b) an organosiloxane oligomer having a weight average molecular weight of 300 to 100,000;

(c) a photocatalyst; and

(d') an organic solvent having a surface tension at 20°C of 260 μN/cm or less:



wherein, R¹, which may be the same or different when two or more R¹ groups are present, represents a monovalent organic group having 1 to 10 carbon atoms; R², which may be the same or different when two or more R² groups are present, represents an alkyl group having 1 to 5 carbon atoms or an aryl acyl group having 1 to 6 carbon atoms; and n is an integer ranging from 0 to 2.

2. (Presently Amended) ~~The A coating composition according to claim 1, which further comprises comprising:~~

(a) at least one component selected from the group consisting of an organosilane represented by the following general formula (1), a hydrolyzate of said organosilane and a condensates of said organosilane;

(b) an organosiloxane oligomer having a weight average molecular weight of 300 to 100,000;

(c) a photocatalyst;

(d') an organic solvent having a surface tension at 20°C of 260 µN/cm or less;



wherein, R^1 , which may be the same or different when two or more R^1 groups are present, represents a monovalent organic group having 1 to 10 carbon atoms; R^2 , which may be the same or different when two or more R^2 groups are present, represents an alkyl group having 1 to 5 carbon atoms or an acyl group having 1 to 6 carbon atoms; and n is an integer ranging from 0 to 2; and

(e) a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group.

3. (Canceled)

4. (Previously Amended) The coating composition according to claim 1, wherein said component (b) has a group represented by general formula - (RO) p- (R' O)q-R" wherein R and R', which may be the same or different, represent alkyl groups each having 1 to 5 carbon atoms, R" represents a hydrogen atom or an alkyl group having 1 to 5 carbon atoms, and p+q is from 2 to 30, and a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group.

5. (Presently Amended) A method for producing a coating composition which comprises hydrolyzing and/or condensing:

~~(a) an organosilane represented by the following general formula (1); and~~

(a-1) at least one component selected from the group consisting of an organosilane represented by general formula (1) wherein n is 1 or 2, and at least one of R¹ groups is an epoxy group-containing substituted derivative, a hydrolyzate of said organosilane and a condensate of said organosilane; and

(a-2) at least one component selected from the group consisting of an organosilane represented by general formula (1) wherein no epoxy group is contained in R¹, a hydrolyzate of said organosilane and a condensate of said organosilane; and

(b) an organosiloxane oligomer having a weight average molecular weight of 300 to 100,000;

in the presence of (c') an aqueous dispersion of a photocatalyst having a pH of 3 to 9 and (d') an organic solvent in which the content of an organic solvent having a surface tension at 20°C of more than 260 μN/cm is 20% by weight or less based on the whole organic solvent:



wherein, R¹, which maybe the same or different when two or more R¹ groups are present, represents a monovalent organic group having 1 to 10 carbon atoms; R², which may be the same or different when two or more R² groups are present, represents an alkyl group having 1 to 5 carbon atoms or an ~~aryl~~ acyl group having 1 to 6 carbon atoms; and n is an integer ranging from 0 to 2.

6. (Canceled)

7. (Presently Amended) A cured product obtained by coating and drying a coating composition comprising:

~~(a) at least one component selected from the group consisting of an organosilane represented by the following general formula (1), a hydrolyzate of said organosilane and a condensates of said organosilane;~~

(a-1) at least one component selected from the group consisting of an organosilane represented by general formula (1) wherein n is 1 or 2, and at least one of R¹ groups is an epoxy group-containing substituted derivative, a hydrolyzate of said organosilane and a condensate of said organosilane; and

(a-2) at least one component selected from the group consisting of an organosilane represented by general formula (1) wherein no epoxy group is contained in R¹, a hydrolyzate of said organosilane and a condensate of said organosilane;

(b) an organosiloxane oligomer having a weight average molecular weight of 300 to 100,000;

(c) a photocatalyst; and

(d') an organic solvent having a surface tension at 20°C of 260 μN/cm or less:



wherein, R¹, which may be the same or different when two or more R¹ groups are present, represents a monovalent organic group having 1 to 10 carbon atoms; R², which may be the same or different when two or more R² groups are present, represents an alkyl group having 1 to 5 carbon atoms or an ~~aryl~~ acyl group having 1 to 6 carbon atoms; and n is an integer ranging from 0 to 2.

8. (Presently Amended) A cured product having a dry coating layer comprising anyone of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition according to claim 1:

(i) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group:

(ii) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), (f) and (g).

C' 9. (Presently Amended) A coating film having a dry coating layer comprising any one of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition according to claim 1:

(i) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group:

(ii) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), (e), (f) and (g).

10. (Previously Added) The coating composition according to claim 2, wherein said component (a) is

(a-1) at least one component selected from the group consisting of an organosilane represented by general formula (1) wherein n is 1 or 2, and at least one of R¹ groups is an epoxy group-containing substituted derivative, a hydrolyzate of said organosilane and a condensate of said organosilane; and

(a-2) at least one component selected from the group consisting of an organosilane represented by general formula (1) wherein no epoxy group is contained in R¹, a hydrolyzate of said organosilane and a condensate of said organosilane.

C' 11. (Previously Added) The coating composition according to claim 2, wherein said component (b) has a group represented by general formula - (RO)_p - (R' O)_q - R'' wherein R and R', which may be the same or different, represent alkyl groups each having 1 to 5 carbon atoms, R'' represents a hydrogen atom or an alkyl group having 1 to 5 carbon atoms, and p+q is from 2 to 30, and a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group.

12. (Presently Amended) The coating composition according to claim 1, wherein said component (a) ~~(a-1) is selected from the group consisting of methyltrimethoxysilane, dimethyldimethoxysilane, and γ-glycidoxypopyltrimethoxysilane.~~

13. (Presently Amended) The coating composition according to claim 1, wherein said component (b) is a mixture of an oligomer having a weight average molecular weight ranging from 400 to 2,800 and an oligomer having a weight average molecular weight ranging from 3,000 to 50,000 ~~selected from the group consisting of an end alkoxy-silyl group containing trifunctional siloxane oligomer having a weight average molecular weight ranging from~~

~~1000-3000, and an end-alkoxysilyl group/poly(oxyethylene/oxypropylene) group containing dimethylsiloxane oligomer having a weight average molecular weight of 10,000.~~

14. (Previously Added) The coating composition according to claim 1, wherein said component (d') is isopropyl alcohol.

15. (Presently Amended) The method according to claim 5, wherein said component (a) (a-1) is selected from the group consisting of methyltrimethoxysilane, dimethyldimethoxysilane, and γ -glycidoxypyrpyltrimethoxysilane.

16. (Presently Amended) The method according to claim 5, wherein said component (b) is a mixture of an oligomer having a weight average molecular weight ranging from 400 to 2,800 and an oligomer having a weight average molecular weight ranging from 3,000 to 50,000 selected from the group consisting of an end-alkoxysilyl group containing trifunctional siloxane oligomer having a weight average molecular weight ranging from 1000-3000, and an end-alkoxysilyl group/poly(oxyethylene/oxypropylene) group containing dimethylsiloxane oligomer having a weight average molecular weight of 10,000.

17. (Previously Added) The method according to claim 5, wherein said component (d') is isopropyl alcohol.

18. (Previously Added) A cured product obtained by coating and drying a composition produced by the method of claim 5.

19. (Presently Amended) A cured product having a dry coating layer comprising anyone of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition obtained by the method of claim 5:

(i) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group;

(ii) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), (e), (f) and (g).

20. (Presently Amended) A coating film having a dry coating layer comprising any one of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition obtained by the method of claim 5:

C¹
(i) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group;

(ii) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), and (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components ~~(a)~~ (a-1), (a-2), (e), (f) and (g).

21. (Previously Added) A method for producing a coating composition which comprises hydrolyzing and/or condensing:

(a) an organosilane represented by the following general formula (1); and

(b) an organosiloxane oligomer having a weight average molecular weight of 300 to 100,000;

in the presence of (c') an aqueous dispersion of a photocatalyst having a pH of 3 to 9 and (d') an organic solvent in which the content of an organic solvent having a surface tension at 20°C of more than 260 $\mu\text{N}/\text{cm}$ is 20% by weight or less based on the whole organic solvent:



wherein, R^1 , which maybe the same or different when two or more R^1 groups are present, represents a monovalent organic group having 1 to 10 carbon atoms; R^2 , which may be the same or different when two or more R^2 groups are present, represents an alkyl group having 1 to 5 carbon atoms or an ~~aryl~~ acyl group having 1 to 6 carbon atoms; and n is an integer ranging from 0 to 2;

and subsequently adding

(e) a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group.

22. (Presently Amended) The method according to claim 21, wherein said component (a) is

(a-1) at least one component selected from the 45 group consisting of an organosilane represented by general formula (1) wherein n is 1 or 2, and at least one of R^1 groups is an epoxy group-containing substituted derivative, a hydrolyzate of said organosilane and a condensate of said organosilane; ~~or~~ and

(a-2) at least one component selected from the group consisting of an organosilane represented by general formula (1) wherein no epoxy group is contained in R^1 , a hydrolyzate of said organosilane and a condensate of said organosilane.

23. (Previously Added) The method according to claim 21, wherein said component (a) is selected from the group consisting of methyltrimethoxysilane, dimethyldimethoxysilane, and γ -glycidoxypropyltrimethoxysilane.

24. (Presently Amended) The method according to claim 21, wherein said component (b) is a mixture of an oligomer having a weight average molecular weight ranging from 400 to 2,800 and an oligomer having a weight average molecular weight ranging from 3,000 to 50,000 ~~selected from the group consisting of an end-alkoxysilyl group containing trifunctional siloxane oligomer having a weight average molecular weight ranging from 1000-3000, and an end-alkoxysilyl group/poly(oxyethylene/oxypropylene) group containing dimethylsiloxane oligomer having a weight average molecular weight of 10,000.~~

25. (Previously Added) The method according to claim 21, wherein said component (d') is isopropyl alcohol.

26. (Previously Added) A cured product obtained by coating and drying a composition produced by the method of claim 21.

27. (Previously Added) A cured product having a dry coating layer comprising anyone of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition obtained by the method of claim 21:

- (i) An undercoating composition containing said components (a) and (e):
- (ii) An undercoating composition containing said components (a) and (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;
- (iii) An undercoating composition containing said components (a) and (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and
- (iv) An undercoating composition containing said components (a), (e), (f) and (g).

28. (Previously Added) A coating film having a dry coating layer comprising any one of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition obtained by the method of claim 21:

(i) An undercoating composition containing said components (a) and (e):

(ii) An undercoating composition containing said components (a) and (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components (a) and (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components (a), (e), (f) and (g).

29. (New) A cured product having a dry coating layer comprising anyone of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition according to claim 2:

(i) An undercoating composition containing said components (a) and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group:

(ii) An undercoating composition containing said components (a), (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components (a), (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components (a), (e), (f) and (g).

30. (New) A coating film having a dry coating layer comprising any one of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition according to claim 2:

(i) An undercoating composition containing said components (a) and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group:

(ii) An undercoating composition containing said components (a), (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components (a), (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components (a), (e), (f) and (g).

31. (New) The coating composition according to claim 2, wherein said component (b) is a mixture of an oligomer having a weight average molecular weight ranging from 400 to 2,800 and an oligomer having a weight average molecular weight ranging from 3,000 to 50,000.

32. (New) The coating composition according to claim 2, wherein said component (d') is isopropyl alcohol.

33. (New) A cured product obtained by coating and drying a coating composition comprising:

(a) at least one component selected from the group consisting of an organosilane represented by the following general formula (1), a hydrolyzate of said organosilane and a condensates of said organosilane;

(b) an organosiloxane oligomer having a weight average molecular weight of 300 to 100,000;

(c) a photocatalyst; and


(d') an organic solvent having a surface tension at 20°C of 260 μN/cm or less:



wherein, R^1 , which may be the same or different when two or more R^1 groups are present, represents a monovalent organic group having 1 to 10 carbon atoms; R^2 , which may be the same or different when two or more R^2 groups are present, represents an alkyl group having 1 to 5 carbon atoms or an acyl group having 1 to 6 carbon atoms; and n is an integer ranging from 0 to 2; and

(e) a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group.

34. (New) A cured product having a dry coating layer comprising anyone of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition according to claim 10:

 (i) An undercoating composition containing said components (a), and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group:

(ii) An undercoating composition containing said components (a), (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components (a), (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components (a), (e), (f) and (g).

35. (New) A coating film having a dry coating layer comprising any one of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition according to claim 10:

(i) An undercoating composition containing said components (a), and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group:


(ii) An undercoating composition containing said components (a), (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components (a), (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components (a), (e), (f) and (g).

36. (New) A cured product having a dry coating layer comprising anyone of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition obtained by the method of claim 22:

(i) An undercoating composition containing said components (a), and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group;

 (ii) An undercoating composition containing said components (a), and (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components (a), (e), and (g), wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components (a), (e), (f) and (g).

37. (New) A coating film having a dry coating layer comprising any one of the following undercoating compositions (i) to (iv), and having thereon a dry coating layer comprising the coating composition obtained by the method of claim 22:

(i) An undercoating composition containing said components (a), and (e), wherein (e) is a polymer containing a silyl group having a silicon atom bound to a hydrolytic group and/or a hydroxyl group;

(ii) An undercoating composition containing said components (a), (e), and (f), wherein (f) is colloidal silica and/or colloidal alumina;

(iii) An undercoating composition containing said components (a), (e), and (g),

wherein (g) is colloidal cerium oxide and/or colloidal zinc oxide; and

(iv) An undercoating composition containing said components (a), (e), (f) and (g).

SUPPORT FOR THE AMENDMENT

Claims 1, 5, 7-9, 12, 13, 15, 16, 19, 20, 22, and 24 have been amended.

Claims 3, 6, and 11 have been canceled.

Claims 29-37 have been added.

The amendment of Claims 1, 5, 7-9, 12, 15, 19, 20, and 22 is supported by the corresponding claims as originally filed, as well as Claims 3, 6, and 10. The amendment of Claims 13, 16, and 24 is supported by page 20, lines 19-22. New Claims 29-37 are supported by the claims as originally filed, page 20, lines 19-22, and page 55, line 9 to page 57, line 17.

No new matter is believed to have been entered by virtue of the present amendment.